AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-13. (cancelled)

14. (new) A nucleotide detector comprising:

a substrate;

metal particles placed on the substrate; and

one of a pair of nucleotide molecules capable of conjugating with each other, bonded to each of the metal particles.

15. (new) The nucleotide detector of Claim 14,

wherein the metal particles is made of gold and the one of the pair of nucleotide molecules comprise a plurality of types of nucleotide molecules having different base sequences.

16. (new) The nucleotide detector of Claim 14

wherein the metal particles is made of gold, and

the one of the pair of nucleotide molecules is a thiol DNA.

17. (new) A method for manufacturing a nucleotide detector comprising the steps of:

(a) arranging, on a substrate, complex particles each including a metal particle and a protein molecule holding the metal particle therein;

(b) removing the protein molecules so that the metal particles are left on the substrate; and

(c) bonding one of a pair of nucleotide molecules capable of conjugating with each other to each of the metal particles left on the substrate.

18. (new) The method for manufacturing a nucleotide detector of Claim 17, wherein the protein molecules are Dps protein or apoferritin.

19. (new) The method for manufacturing a nucleotide detector of Claim 17, wherein the nucleotide molecules comprise a plurality of types of nucleotide molecules having different base sequences.

20. (new) The method for manufacturing a nucleotide detector of Claim 17, wherein the metal particles are made of gold, and

the step (c) comprises a sub-step of:

(c1) reacting the one of the pair of nucleotide molecules having a sulfur atom at one end with the metal particles, thereby bonding the metal particles and the one of the pair of nucleotide molecules.

21. (new) The method for manufacturing a nucleotide detector of claim 20, wherein the one of the pair of nucleotide molecules and the metal particles are reacted by bringing an aqueous solution including the on of the pair of nucleotide molecules having ht sulfur atom at one end in contact with the substrate on which surface the metal particle is left.

22. (new) The method for manufacturing a nucleotide detector of Claim 21, wherein the step (c) is performed at a temperature between 20°C and 60°C, inclusively.

23. (new) The method for manufacturing a nucleotide detector of Claim 21, wherein the amount of the one of the pair of nucleotide molecules having the sulfur atom at one end included in the aqueous solution is more than the amount of the metal particles left on the substrate.

24. (new) The method for manufacturing a nucleotide detector of Claim 22, wherein the protein molecule is an apoferritin having holes therein, and

the complex particles including the metal particles and the protein molecules holding the metal particles therein are obtained by the steps of:

substituting amino acid residues located within the apoferritin and positively charging the holes within the apoferritin; and

introducing $AuCl_4^-$ into the holes of that apoferritin.

25. (new) The method for manufacturing a nucleotide detector of Claim 17, wherein the step (c) comprises sub-steps of:

(c2) forming a resist film, having a first opening exposing a portion of the metal particles left on the substrate, on the substrate; and

(c3) reacting the metal particles exposed in the first opening with the one of the pair of nucleotide molecules.

26. (new) The method for manufacturing a nucleotide detector of Claim 19, wherein the step (c) comprises sub-steps of:

(c2) forming a resist film, having a first opening exposing a portion of the metal particles left on the substrate, on the substrate;

(c3) reacting the metal particles exposed in the first opening with the one of the pair of nucleotide molecules;

(c4) forming another resist film, having a second opening exposing a portion of the metal particles left on the substrate and provided in a different position as the first opening, on the substrate, after the sub-step (c3); and

(c5) reacting the metal particles exposed in the second opening with one of a pair of nucleotide molecules having a different base sequence as the one of the pair of nucleotide molecules used in step (c3).

27. (new) The method for manufacturing a nucleotide detector of claim 17, wherein the metal particles are made of gold,

a plurality of electrodes are interposed between the substrate and the metal particles, and

the step (c) comprises a sub-step of:

applying electric potentials to a first electrode while applying no electric potential to electrodes other than the first electrode, and bonding the one of the pair of nucleotide molecules having the sulfur atom at one end and the metal particles provided on the first electrode.

28. (new) The method for manufacturing a nucleotide detector of Claim 19, wherein the metal particles are made of gold,

a plurality of electrodes are interposed between the substrate and the metal particles, and

the step (c) comprises sub-steps of:

(c6) applying electric potentials to a first electrode while applying no electric potential to electrodes other than the first electrode, and bonding the one of the pair of nucleotide molecules having the sulfur atom at one end and the metal particles provided on the first electrode; and

(c7) applying electric potentials to a second electrode while applying no electric potential to electrodes other than the second electrode, and bonding the one of the pair of nucleotide molecules having the sulfur atom at one end and the metal particles provided on the second electrode.

29. (new) A DNA/RNA detecting method using a nucleotide detector comprises of a substrate, and one of a pair of nucleotide molecules capable of conjugating with each other and is bonded to each of the metal particles, comprising steps of:

bringing a solution containing a fluorescence-labeled subject DNA or RNA in contact with the nucleotide detector, thereby hybridizing the fluorescence-labeled subject DNA or RNA with the one of the pair of nucleotide molecules;

cleaning the nucleotide detector with a solution containing no fluorescent substance; and

observing the fluorescence by irradiating the nucleotide detector with light.

CONCLUSION

Claims 14-29 are currently pending in the application. Prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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